

Technical Document 2897

February 1996

Natural Resources Management Plan for Naval Submarine Base, San Diego

Volume 3: Appendix O

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Marine Environmental Support Office
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92152-5001

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**NAVAL COMMAND, CONTROL AND
OCEAN SURVEILLANCE CENTER
RDT&E DIVISION
San Diego, California 92152-5001**

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ADMINISTRATIVE INFORMATION

The work detailed in this report was performed for Naval Submarine Base, San Diego, CA, by the Naval Command, Control and Ocean Surveillance Center RDT&E Division, Computer Sciences Corporation, and the San Diego State University Foundation.

Released by
S. J. Harrell, Head
Marine Environmental
Support Office

Under authority of
R. H. Moore, Head
Environmental Quality
Division

Photo Documentation of SUBASE Natural Resources, 1990-1996

Notes

The photographs presented in this appendix are intended to be a fairly complete pictorial introduction to SUBASE natural resources. Some common resources are absent due to difficulty or lack of opportunity (luck) to photograph. Ground squirrels, gray fox, bobcat, and bush rabbits are lacking; all of these species are fast and the rabbits especially are active under bad lighting conditions. Foxes, and especially bobcats, also tend to be extremely secretive. Only in the last few years have enough documented sightings come in that I can claim, with confidence, that bobcats are present and active on Point Loma. Most of their sightings are from about White Road south to Cabrillo National Monument. On local snakes, Child Development Center personnel described the San Diego ringneck snake exactly. Although I personally have never seen one, there is simply no possibility for error. In addition, I have not been able to photograph the San Diego gopher snake.

I tried for a balanced view of the most common native plants that occur on Point Loma and on SUBASE. However, some are missing from this appendix. The most important are the two most common native grasses: *Stipa lepida* (foothill bunch grass) and *Agrostis diegoensis* (leafy bent grass). Photographs of these grasses are present on SUBASE Environmental's walls, and unfortunately due to a major laboratory move, my slides of these plants could not be found in time for publication. Other omissions were due to lack of a suitably good photograph, or lack of space in the appendix.

I used the scientific and common names found in Beauchamp (1986) and Munz (1974); being more familiar with these versions than those contained in the newer Jepson (1993).

Photographs were taken by me (Mary F. Platter-Rieger) unless otherwise noted. I have credited all other photographers in the captions for their pictures, and their photographs are used with their knowledge and consent. Any other errors or omissions are mine.

Table 1 contains a handy guide to expected blooming times for local native plants; data came from Beauchamp (1986). However, if the temperature and moisture conditions are not correct within a given year, some species will remain dormant, or will be present with leaves, but will not bloom even during the appropriate times. Mariposa lilies

(*Calochortus weedii* var *weedii*) are not seen every year, and ceanothus does not always produce fertile seed, even though individuals may bloom during a drought year. Personnel new to the San Diego area must remember that this is a semi arid zone. During the hot, dry summers many native plants are drought deciduous and drop or wither their leaves: *Euphorbia misera* [cliff spurge], *Salvia mellifera* [black sage], and *Artemisia californica* [California sagebrush] are good examples. These plants are not dead; they are merely temporarily dormant until environmental conditions are again favorable for their survival and reproduction. A gray-green aspect to our native vegetation is normal and expected during parts of every year; emerald green vegetation all year around in this area usually indicates the presence of wasteful over-watering and noxious, non-native weeds. Not all perennial native plants are drought deciduous. Lemonade-berry (*Rhus integrifolia*) has beautiful, thick waxy-green leaves all year, as do toyon (*Heteromeles arbutifolia*) and laurel sumac (*Malosoma laurina*).

Table 1. Average expected blooming times for Point Loma native plants, most of which are shown via photos, and can be located by their figure number in Appendix O.

| Scientific Name | Common Name | Blooming Times | Figure |
|---|----------------------|------------------|--------|
| <i>Stipa lepida</i> | foothill bunch grass | March - May | |
| <i>Stipa coronata</i> | giant stipa | May - August | |
| <i>Agrostis diegoensis</i> | leafy bent grass | July - August | |
| <i>Adentostoma fasciculatum</i> | chamise | March - July | 70, 71 |
| <i>Artemisia californica</i> | California sagebrush | November - | 72, 73 |
| <i>Baccharis sarothroides</i> | chaparral broom | September - | 74 |
| <i>Ceanothus verrucosus</i> | wartystem ceanothus | December - June | 75, 76 |
| <i>Encelia californica</i> | bush sunflower | January - July | 77, 78 |
| <i>Cneoridium dumosum diverifolia</i> | bushrue | November - March | 79, 80 |
| <i>Eriodictyon crassiform</i> | Yerba Santa | April - June | 81 |
| <i>Eriogonum fasciculatum</i> ssp <i>fasciculatum</i> | flat top buckwheat | March - October | 82, 83 |

| | | | |
|--|-------------------|------------------|----------|
| <i>Euphorbia misera</i> | cliff spurge | January - August | 84, 85 |
| <i>Haplopappus venetus</i> | coast goldenbush | April - December | 86 |
| <i>Haplopappus squarrosus ssp grindeloides</i> | common hazardia | June - October | 87 |
| <i>Heteromeles arbutifolia</i> | toyon | June - July | 88, 89 |
| <i>Isomeris arborea</i> | bladderpod | January - | 90, 91 |
| <i>Lotus scoparius</i> | deer weed | March - August | 92 |
| <i>Malachothamnus fasciculatus</i> | bushmallow | April - July | 93, 94 |
| <i>Malosma laurina</i> | laurel sumac | May - July | 95 |
| <i>Mirabilis californica</i> | wishbone bush | December - June | 96 |
| <i>Quercus dumosa</i> | scrub oak | April - July | 97, 98 |
| <i>Rhamnus crocea</i> | spiny redberry | March - June | 99 |
| <i>Rhus integrifolia</i> | lemonade berry | February - May | 100, 101 |
| <i>Salvia mellifera</i> | black sage | April - July | 102, 103 |
| <i>Solanum xantii</i> | purple nightshade | May - June | 104, 105 |
| <i>Xylococcus bicolor</i> | mission manzanita | December - | 106, 107 |
| <i>Castilleja foliolosa</i> | felt paintbrush | February - June | 108, 109 |
| <i>Coreopsis maritima</i> | sea dahlia | March - May | 110 |
| <i>Corethrogynne filaginifolia var virgata</i> | corethrogynne | July - October | 111 |
| <i>Diplacus puniceus</i> | monkey flower | March - July | 112 |
| <i>Gnaphalium bicolor</i> | cudweed | January - May | 113 |

| | | | |
|---|------------------------|-------------------|----------|
| <i>Eriophyllum confertiflorum</i> var <i>confertiflorum</i> | golden yarrow | January - July | 114 |
| <i>Dodecatheon clevelandii</i> <i>sanctarum</i> | Padre's shooting star | January - April | 115 |
| <i>Helianthemum scoparium</i> var <i>vulgare</i> | common rock rose | March - September | 116, 117 |
| <i>Lomatium lucidum</i> | lomatium | January - May | 118 |
| <i>Viguiera lacinata</i> | San Diego sunflower | January - July | 119 |
| <i>Calystegia macrostegia</i> | native morning glory | March - May | 120 |
| <i>Astragalus trichopodus</i> ssp <i>leucopsis</i> | S. California locoweed | February - June | 121 |
| <i>Dudleya edulis</i> | lady fingers | May - June | 122 |
| <i>Dudleya lanceolata</i> | lance-leaved dudleya | May - July | 123 |
| <i>Dudleya pulverulenta</i> | chalk live-forever | May - July | 124, 125 |
| <i>Ferocactus viridescens</i> | coast barrel cactus | May - June | 126, 127 |
| <i>Yucca schidigera</i> | Mohave yucca | April - May | 128 |
| <i>Opuntia littoralis</i> | prickly pear | May - June | 129 |
| <i>Opuntia prolifera</i> | coastal cholla | April - June | 130 |
| <i>Opuntia parryi</i> var <i>serpentina</i> | snake cholla | April - May | 131, 132 |
| <i>Antirrhinum nuttallianum</i> | Nuttles snapdragon | February - August | 133 |
| <i>Chaenactis glabriuscula</i> var <i>orcuttiana</i> | yellow chaenactis | January - June | 134 |
| <i>Camissonia bistorta</i> | sun cups | March - June | 135, 136 |
| <i>Centaurium venustum</i> | canchalogua | March - July | 137, 138 |
| <i>Chorizanthe fimbriata</i> var <i>fimbriata</i> | fringed spine flower | April - June | 139 |

| | | | |
|---------------------------------------|------------------------|-------------------|----------|
| <i>Cryptantha intermedia</i> | popcorn flower | March - July | 140 |
| <i>Lupinus truncatus</i> | collar lupine | February - May | 141 |
| <i>Phacelia distans</i> | common phacelia | March - August | 142 |
| <i>Navarretia hamata ssp hamata</i> | skunk weed | April - June | 143 |
| <i>Eschscholzia californica</i> | California poppy | February - | 144 |
| <i>Stephanomeria virgata</i> | twiggy wreath plant | July - October | 145, 146 |
| <i>Stylocline gnaphaloides</i> | everlasting nest-straw | February - June | 147 |
| <i>Allium praecox</i> | wild onion | February - March | 148, 149 |
| <i>Calochortus weedii var weedii</i> | Weed's Mariposa lily | May - July | 150, 151 |
| <i>Dichelostemma pulchella</i> | blue dicks | February - March | 152, 154 |
| <i>Marah macrocarpus</i> | wild cucumber | January - April | 153 |
| <i>Piperia cooperi</i> | chaparral orchid | March - July | 155 -157 |
| <i>Zigadenus fremonti</i> | star lily | April - May | 158 |
| <i>Chlorgalum parvaflorum</i> | small-flower soap | May - June | 159 |
| <i>Distichlis spicata ssp spicata</i> | salt grass | April - September | 160 |
| <i>Melica imperfecta</i> | coast range melic | April - May | 161 |
| <i>Elymus glaucus</i> | blue wild rye | June - August | 162 |
| <i>Selaginella cinerascens</i> | mesa mossfern | | 163, 164 |
| <i>Polypodium californicum</i> | California polpody | | 165 |

Literature Cited

Beauchamp, R. Mitchel. 1986. *A flora of San Diego County, California*. National City, CA: Sweetwater River Press.

Hickman, James C., editor. 1993. *The Jepson manual: higher plants of California*. Berkeley, CA: University of California Press.

Munz, Philip A. 1974. *A flora of southern California*. Berkeley, CA: University of California Press.

**Appendix O - Photo Documentation of
SUBASE Natural Resources,
1990 – 1996**

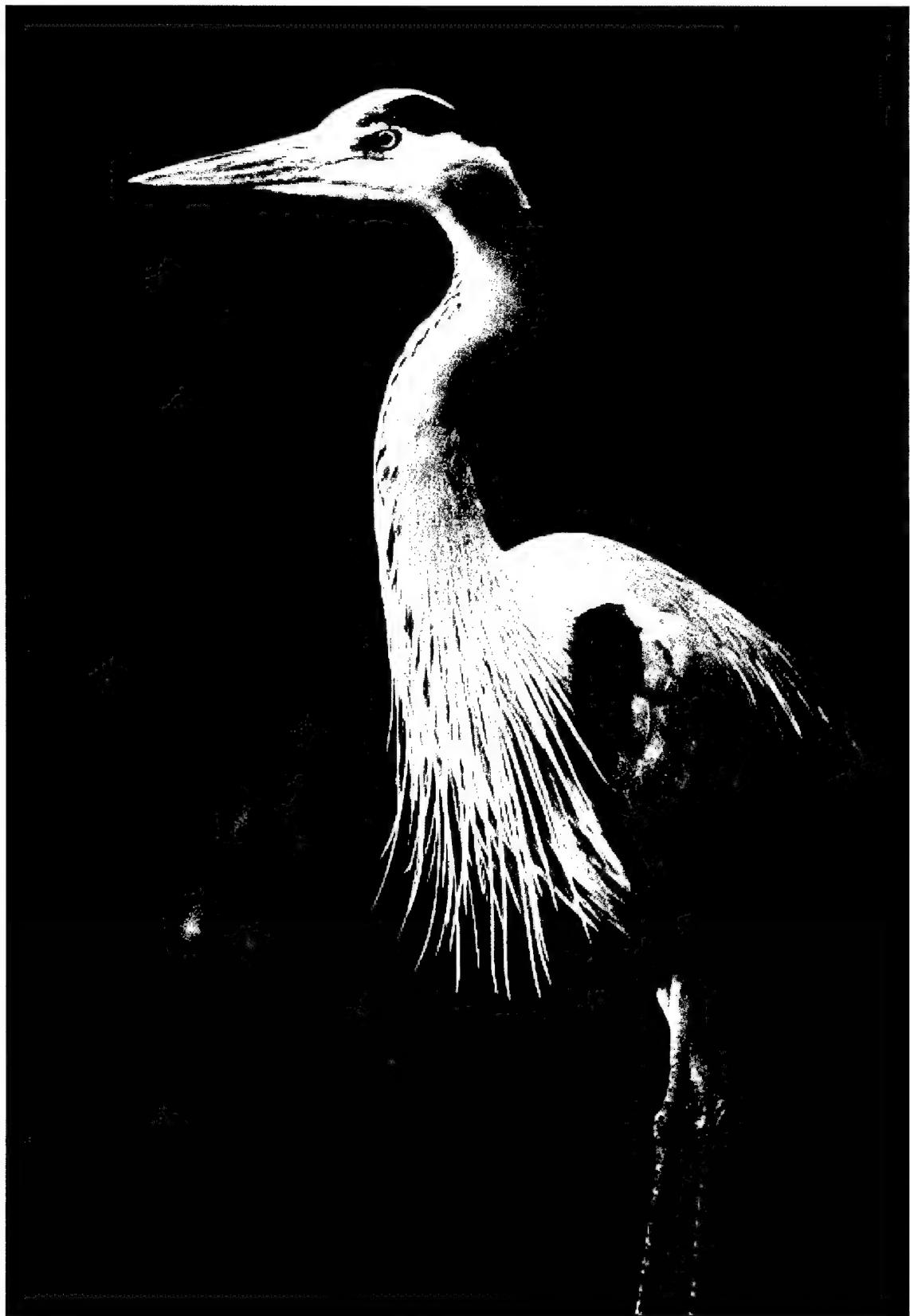


Figure 1. Adult great blue heron with a bright orange bill and blue eye-skin color indicating readiness for breeding.



Figure 2. Adult great blue heron with a bright orange bill and blue eye-skin color indicating readiness for breeding, standing on a nest platform. Photographed by Jerry Mosley, 1995.



Figure 3. Adult great blue heron standing on a nesting platform in the Old Colony, Subbase. Photographed by Anthony Mercieca, 1994.



Figure 4. Three great blue heron chicks, near fledging age, on nest in a Torrey pine tree. Picture by NRAD Photography Branch.

Figure 5. Newly fledged great blue heron juvenile, walking after several short flights.

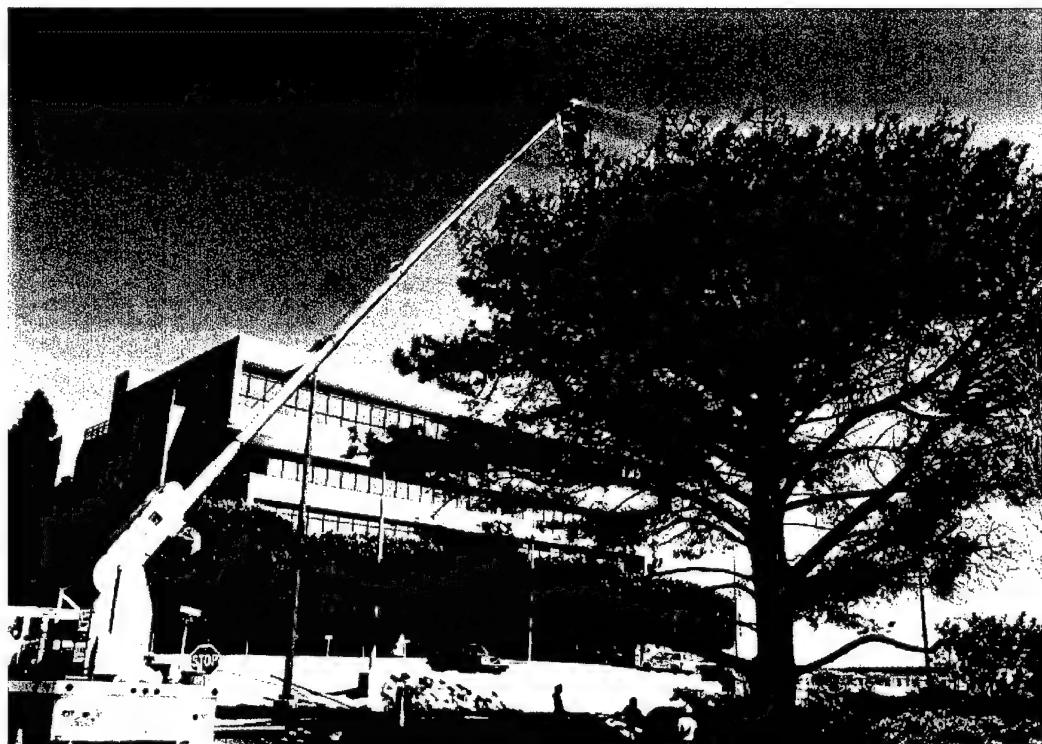


Figure 6.
Boom truck extended with a bird-bander in the basket, ready to get great blue heron chicks for banding. This project started at NRAD and went south to Subase, 1995.



Figure 7. Three great blue heron chicks, curled in the bucket used to bring them down from their nest for banding and tagging.



Figure 8. Bird banders taking initial measurements on the nestling great blue heron chicks that are about to be banded.



Figure 9. Two bird banders preparing to place a wing tag on a great blue heron chick. A hole is punched in the flap of skin above the elbow; all tags are precisely fitted to each bird for maximum comfort.

Figure 10. Tag yellow A2 has just been fitted to one of two young great blue heron nestlings.



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Figure 11. Yellow tag A1 was one of the first great blue heron chicks to fledge in 1995. All great blue herons banded on Point Loma receive yellow wing tags.



Figure 12. This great blue heron, a fledged juvenile, was feeding in a pond at the San Diego Zoo; its' white A6 tag was placed on it at NAS North Island in the same year, 1995.

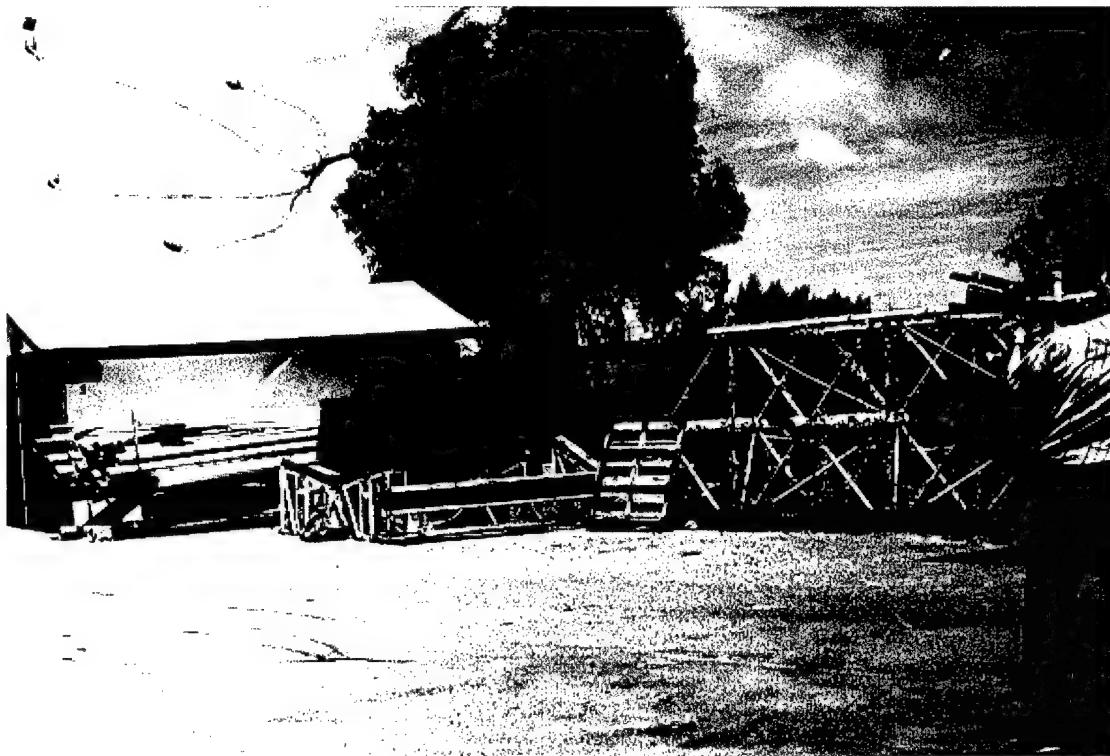


Figure 13. Demonstration shot of the net gun used to capture subadult and adult great blue herons for banding and tagging in 1996.



Figure 14. Adult great blue heron just released after being tagged yellow D8 in 1996.



Figure 15. Normal, healthy breast and abdomen of a two year old great blue heron who accidentally drowned. Note the plump, thick muscles; smooth skin with underlaying fat; and soft, sunken abdomen.



Figure 16. Juvenile great blue heron suffering severe steatitis or yellow fat disease. Note the lack of breast muscle; hard lumpy yellow fat under the skin; and extremely distended and hard abdomen.



Figure 17. Necropsy of a juvenile black-crowned night heron suffering severe steatitis: note large amounts of hard, lumpy yellow fat now exposed, just under the skin.

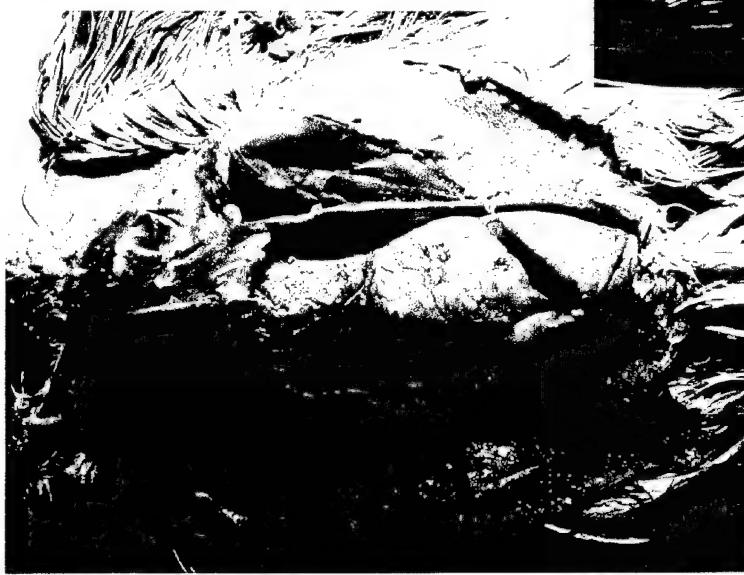


Figure 18. Necropsy of a juvenile black-crowned night heron suffering severe steatitis: note large amounts of hard, lumpy yellow fat just under the skin, and the prominent keel with minimum breast muscle.



Figure 19. Necropsy of a juvenile black-crowned night heron suffering severe steatitis: note the extreme amounts of hard, lumpy yellow fat under the abdominal muscles (removed) and completely covering the liver.

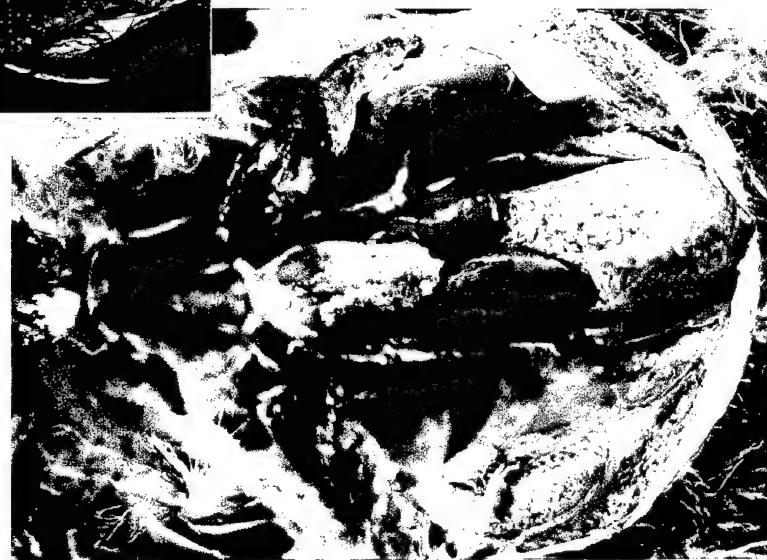


Figure 20. Necropsy of a juvenile great blue heron suffering severe steatitis: note the extreme amounts of hard, lumpy yellow fat with hemorrhaging present covering the heart (left end of photo) and the stomach and intestines (right end of photo).



Figure 21. The hard, oily dry lumps of amber-colored fat on a loop of intestine are evidence of the severe steatitis which killed this great blue heron, even though the corpse is old and mummified.



Figure 22. This black, powdery lesion, on the abdomen of a rehabilitated great blue heron suffering from severe steatitis, is one of the results of the body's attempts to absorb and dispose of the abnormal fat.



Figure 23. Poor feather condition and extreme amounts of peeling skin are also common in herons attempting to recover from severe steatitis.



Figure 24. The excessively oily feather condition of this juvenile great blue heron, released after successful rehabilitation from severe steatitis, reflects one of the body's mechanisms for dumping the excess fats. Rehabilitation occurred through the dedicated efforts of Project Wildlife personnel.



Figure 25. Squatting in its kennel, this young great blue heron of about one month in age, is at Project Wildlife for rehabilitation after falling out of its nest.



Figure 26. Meryl Faulkner, Project Wildlife Seabird Team Leader, holds "Dirty Harry", a three year old great blue heron with a permanently stiff wing who is an educational bird.



Figure 27. Old Colony, Subbase, before the mitigation nesting towers were installed. This photograph was taken from the south end while looking north, 1995.



Figure 28. Old Colony, Subbase, before mitigation towers. This photograph was taken from the north, looking south, in 1995.



Figure 29. Old Colony, Subbase. During installation of the mitigation towers, this photograph was taken from the north, looking south, in 1995.

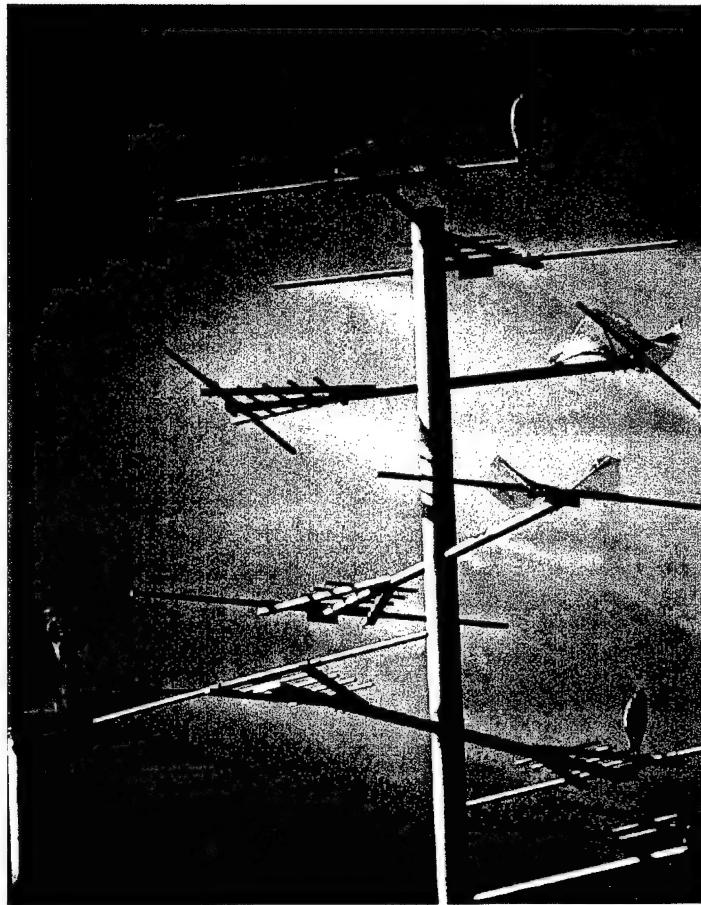


Figure 30. Nesting towers near Old Colony, Subbase, early in the 1995 great blue heron breeding season. Photographed by Jerry Mosley.

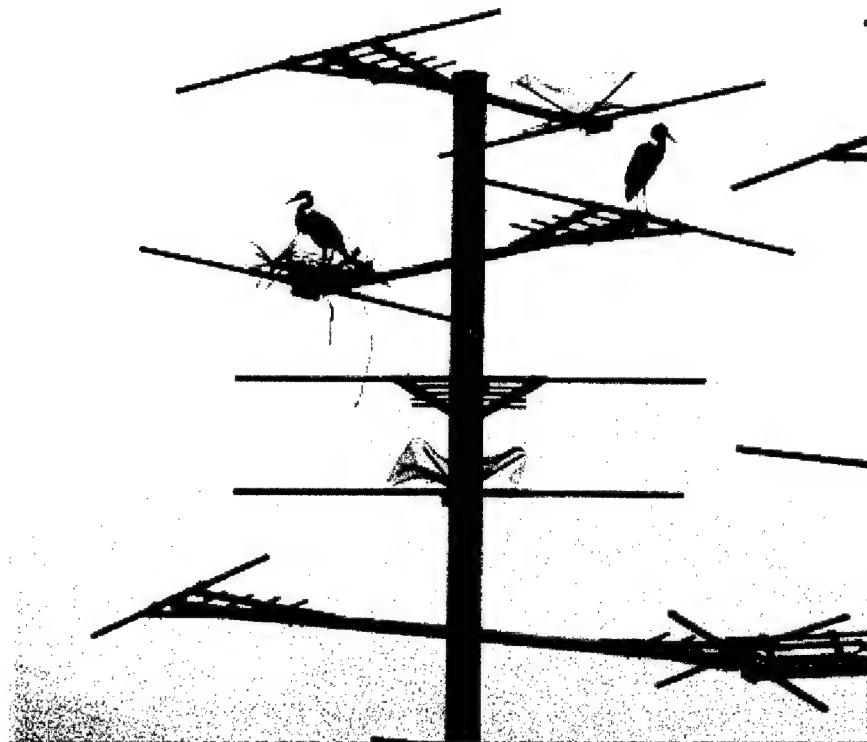


Figure 31. A mitigation nesting tower with the one active nest it held during 1995, near the Old Colony, Subbase. Both members of the pair showed very good mating and incubation behaviors even though they were subadults; however their single egg was infertile and the nesting attempt was unsuccessful.



Figure 32. Adult black-crowned night heron. Field marks for an adult include the white nuptial plumes from the back of the head; the ruby-red eyes; the clean white neck, forehead band, and breast; the dramatic dark gray and black wings and back; and the ebony black bill.



Figure 33. Adult black-crowned night heron incubating eggs on her nest. Note the red eye and clean white forehead band below the black cap. Black-crowned night herons are most active during late evening, night, and at dawn. They prefer dense foliage for roosting, sleeping, and nesting. Photograph by Edi Gresham.



Figure 34.
Fledged juvenile black-crowned night heron in a tree near the Subase nesting colony. The process of fledging takes one to two weeks while the herons are mastering the art of both flying and controlled landings.



Figure 35. A young fledgling black-crowned night heron (note scruffy white down on top of head, streaked and spotted feathering, and green legs) hanging out on the ground underneath the nesting trees.



Figure 36. Young fledgling black-crowned night heron (note the give-away white down on top of the head) enjoying the temporary wading and drinking pool provided by Captain Stanley and the SeaBees during 1995, below the nesting trees.

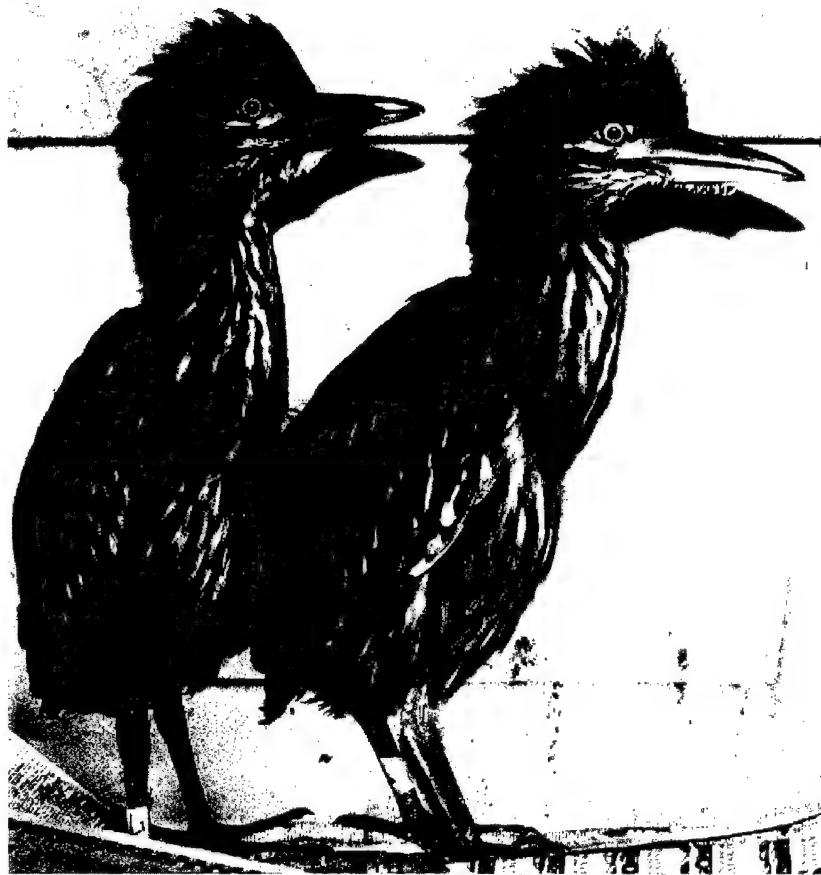


Figure 37. Young black-crowned night heron chicks in a kennel at Project Wildlife for rehabilitation and a second chance. They are too young to fly and starved; they probably lost out to older, stronger siblings in the fight for food and nest space, or they may have just been unlucky.



Figure 38.
Young black-crowned night heron chicks are quite tough-minded and rarely give up, even when badly out-numbered and out-classed in size.

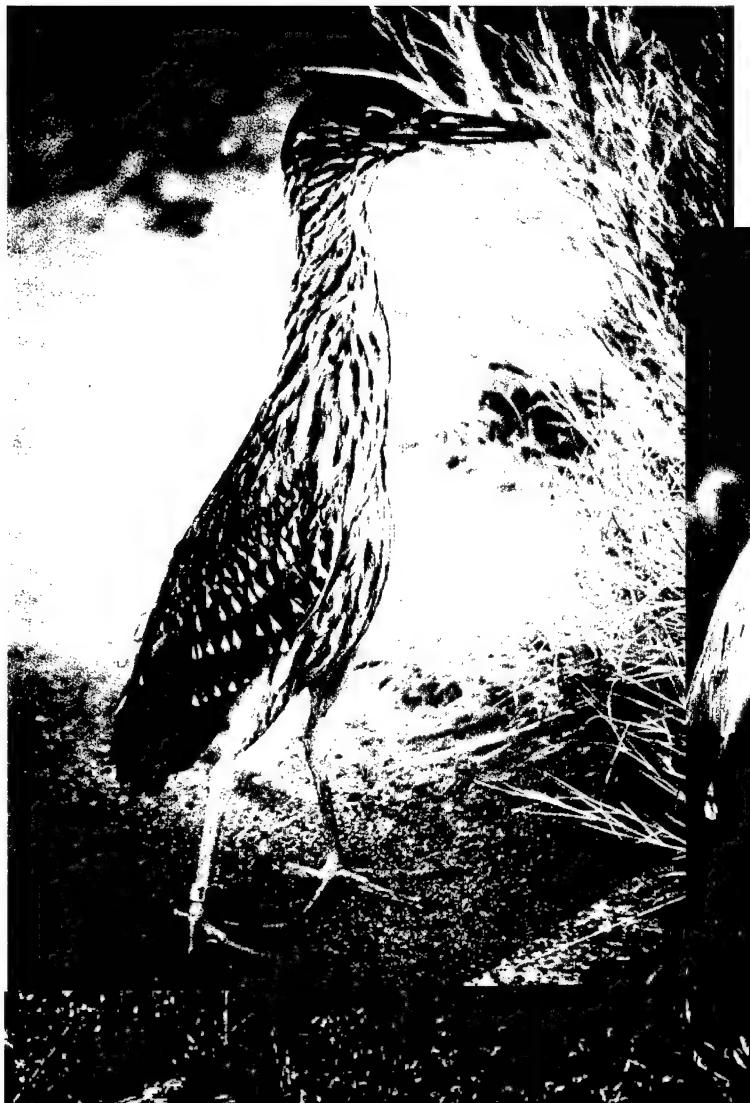


Figure 39. A young black-crowned night heron fledgling, found under the nesting trees when six days old, shown at its release to the wild three months later.



Figure 40. A 1.5 year old black-crowned night heron demonstrating older juvenile plumage.

Figure 41. Young black-crowned night heron rehabilitated at Project Wildlife and photographed at the moment of release back to the wild.



Figure 42. Young brown pelicans perch on the Bait Barge. California brown pelicans are still listed as both state and federally endangered. Young birds can be identified by their white bellies and plain, dark heads.



Figure 43. An adult brown pelican, dead of trauma, disease, or starvation. Any injured or dead pelicans must be reported immediately to Subbase Environmental or Subbase Security for proper handling. Disposal in trash containers is illegal.



Figure 44. Juvenile Brandt's cormorants standing on the Bait Barge. Note the small buffy throat patch; directly underneath the bill is a dull blue skin pouch that turns electric-blue during the breeding season on adults. They also develop widespread, swept-back, long white cheek whiskers for breeding plumage. Approximately 80-90% of the cormorants around Subbase are Brandt's; the remainder are double-crested. Pelagic cormorants are seen occasionally on the ocean side of Point Loma, but never in San Diego Bay.



Figure 45. A young juvenile Brandt's cormorant, healthy and well oiled, swimming in a pool before release from Project Wildlife.

Figure 46. A double-crested cormorant on the Bait Barge, in alert position. This bird is probably a juvenile, although it is difficult to tell from the back. Juveniles are lighter across the chest and abdomen than adults. Note the bright chrome-yellow throat pouch and lores (eye-skin) areas on the head; these are field marks for double-crested cormorants. Adults develop two thick, white eyebrows during the breeding season.



Figure 47. An adult western gull incubating her nest on the lower ball-field, Subbase. Every year, several pairs at Subbase will breed on top of buildings, ships, stationary equipment, or apparently suitable areas of flat ground.



Figure 48. An adult western gull raising up in alarm and defense of her nest with three eggs. Adults are four years or more old. Chicks peck at the red spot on the bill to trigger the adult's feeding response.



Figure 49. An adult western gull guarding the two young chicks in the background. Gull chicks are precocial and can run within a few hours of hatching. The natal down is thick and attractively speckled with camouflage colors.



Figure 50. An osprey soars over Subbase piers. Ospreys used to nest here, and hopefully will again in the future. Every year more individuals show up on migration. Picture by Subbase Photography Department.

Figure 51. Peregrine falcons started nesting at the south end of Point Loma in 1995. This site had been unused for 49 years, except for hacking out captive-bred peregrines during the 1980's. Photograph by Anthony Mercieca, 1996.



Figure 52. A two year old male surf scoter swimming near the piers. Surf scoters are diving ducks and stop in San Diego Bay to feed and rest during migration to and from their breeding grounds. As an adult, this male will develop a brilliantly colored red and orange bill. Photographed by Jerry Mosley, 1995.



Figure 53. Three tiny, new killdeer chicks hide behind a small plant. They depend mostly on camouflage coloring to blend in and escape predators.



Figure 54. The adult killdeer is alert and ready to lead potential predators away from the nest site.



Figure 55. An adult California quail perches in a *Cneoridium dumosum* bush. Subbase wildlands support a good population of quail. However, hunting is not allowed on base.

Figure 56. A young western fence lizard, showing the average coloration and pattern.

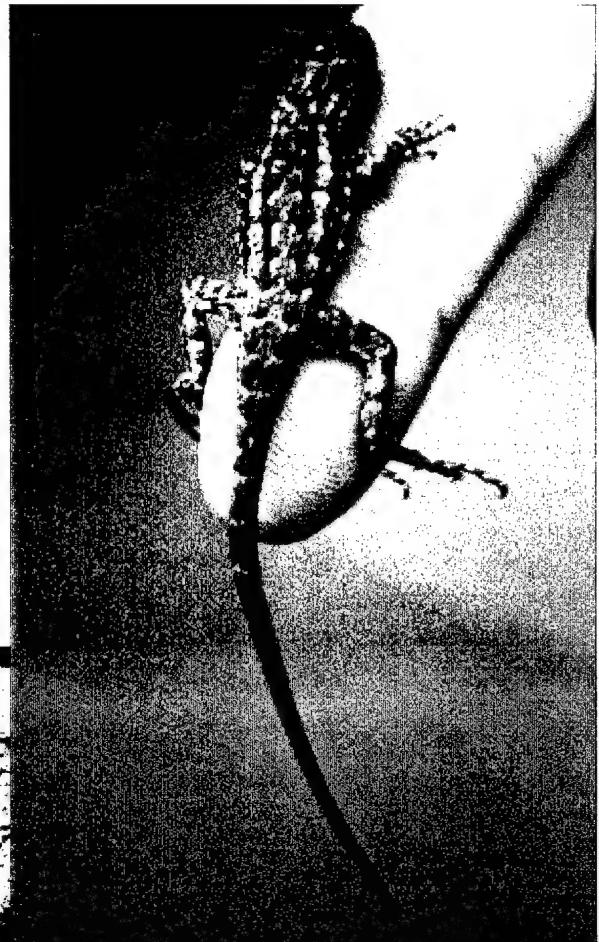


Figure 57. An older and larger western fence lizard, showing a normal, melanistic variation in color. This animal appears to be black with little if any spotting.

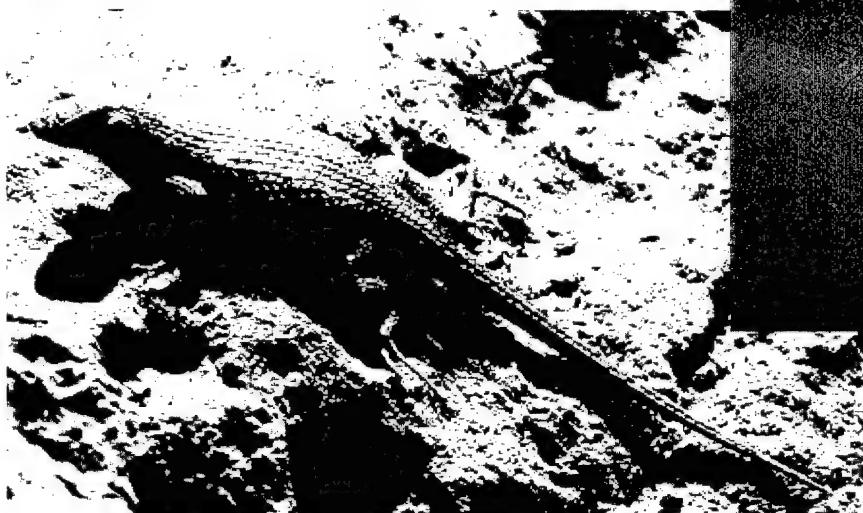


Figure 58. An adult alligator lizard playing dead on a concrete porch area. Note the very large body and small legs relative to other resident lizard species.

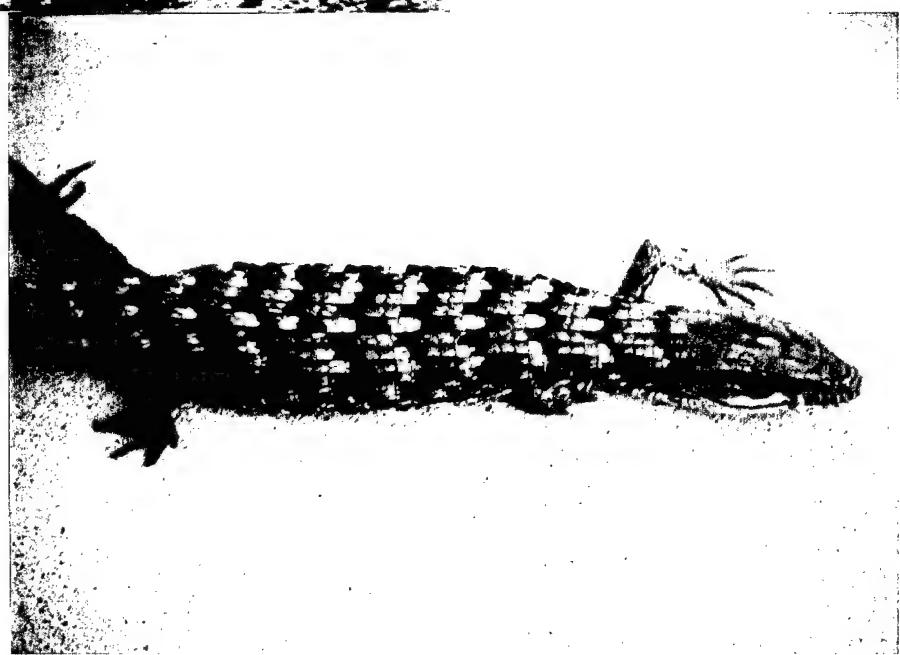


Figure 59. A side-blotched lizard, held to show the blotch located behind the elbow.

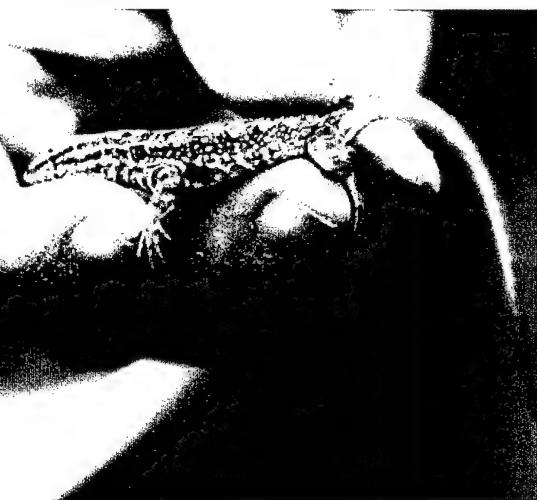


Figure 60. An adult side-blotched lizard; note the light speckling on the back and sides.



Figure 61. An adult orange-throated whiptail, showing the separated dorsal strip found on Point Loma, the bright lateral strips, long smooth head, and very long tail characteristic of the species.



Figure 62. An orange-throated whiptail seen up close in all its glory. The black spot below the human thumb is its ear hole.



Figure 63. The southern Pacific rattlesnake (a local subspecies of the western rattlesnake) is fairly common in Subase's wildlands. Its rattles are in the lower right hand side.

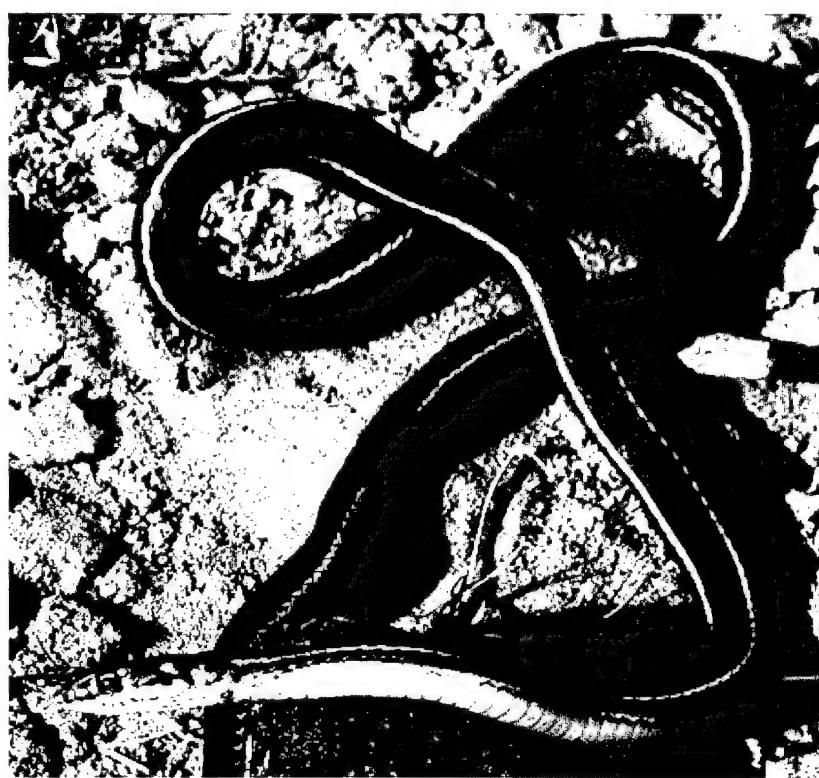


Figure 64. The chaparral whipsnake is a non-poisonous, very fast snake found throughout Subase's wildlands.

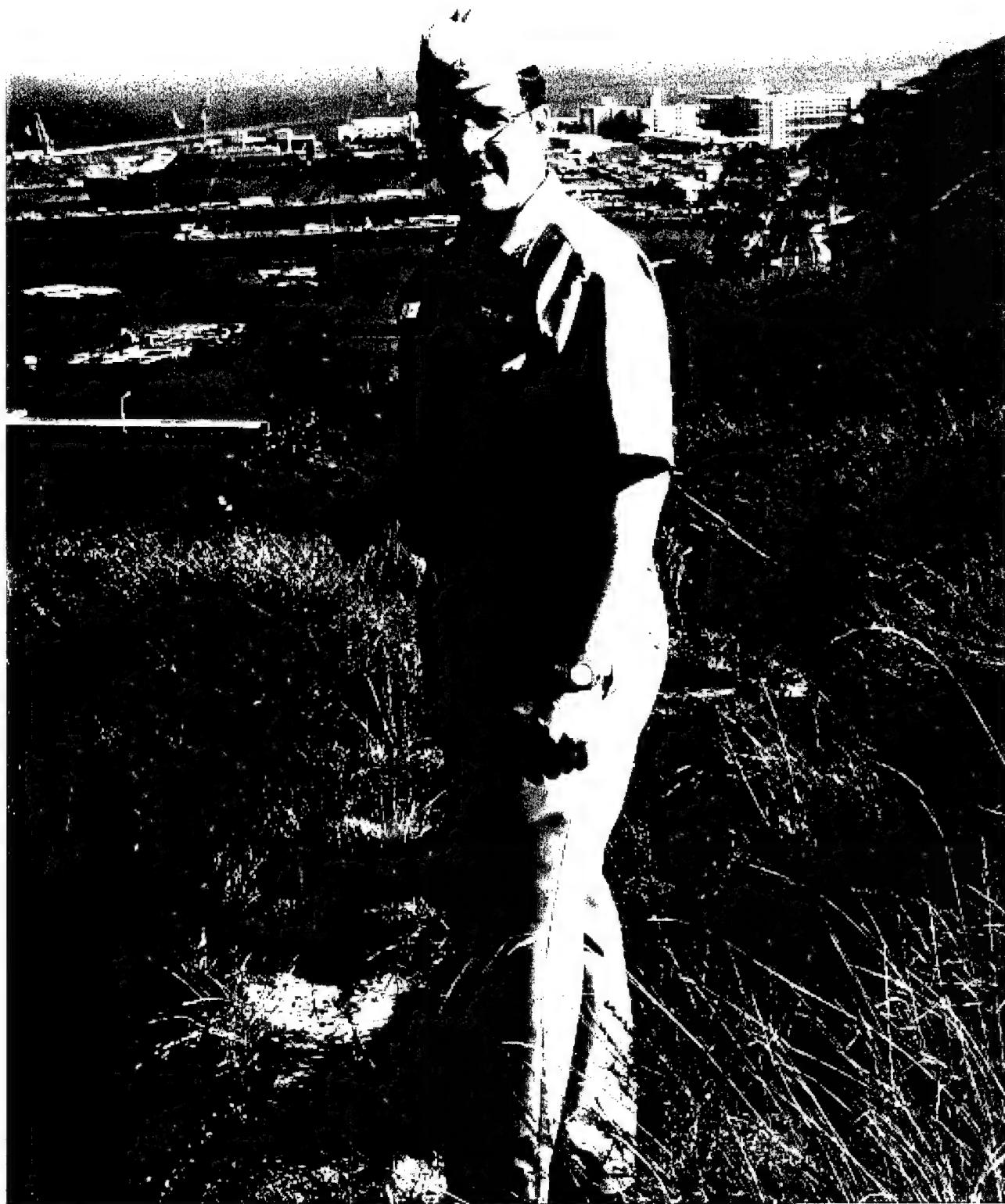


Figure 65. LT Bruce Hastie, a human male, *Homo sapiens sapiens*, is a fine example of the most common and plentiful mammal found on Subbase. He is a representative of the Navy, which is an important and crucial component of entire Point Loma ecosystem.

Figure 66. Coyotes are present on Point Loma, but are rarely seen.

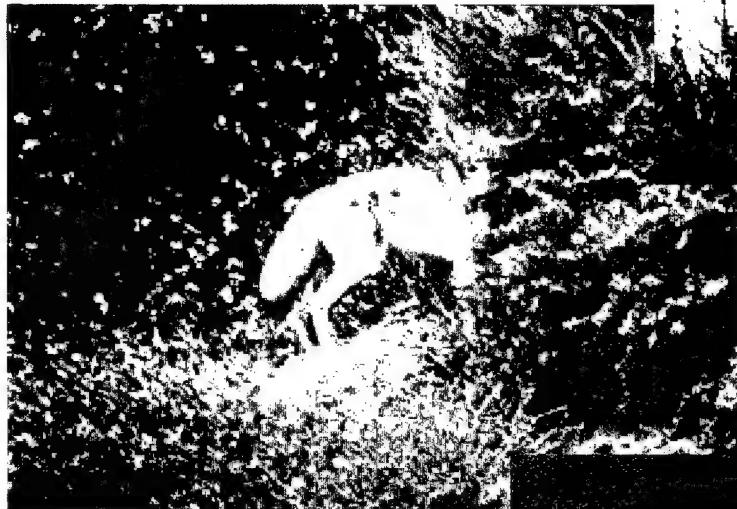


Figure 67. This male coyote was involved in digging a potential den for his very pregnant mate. The final decision as to which of several alternative den sites to use is made near birthing time.

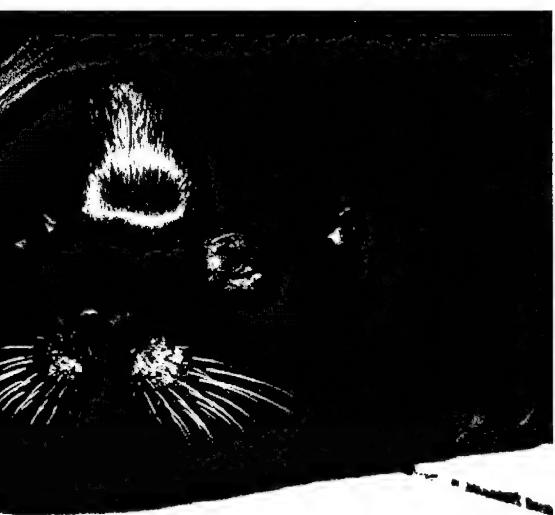
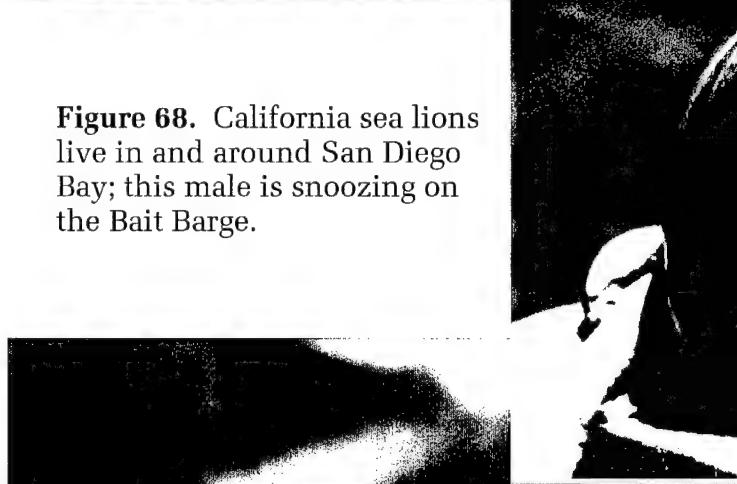


Figure 68. California sea lions live in and around San Diego Bay; this male is snoozing on the Bait Barge.

Figure 69. Although there are likely more sensitive insects on Point Loma, to date only the Wandering Skipper butterfly, federal category 2 candidate species, has been identified.



Figure 70. *Adentostoma fasciculatum*, chamise, is a chaparral shrub that grows on the higher areas of Point Loma.

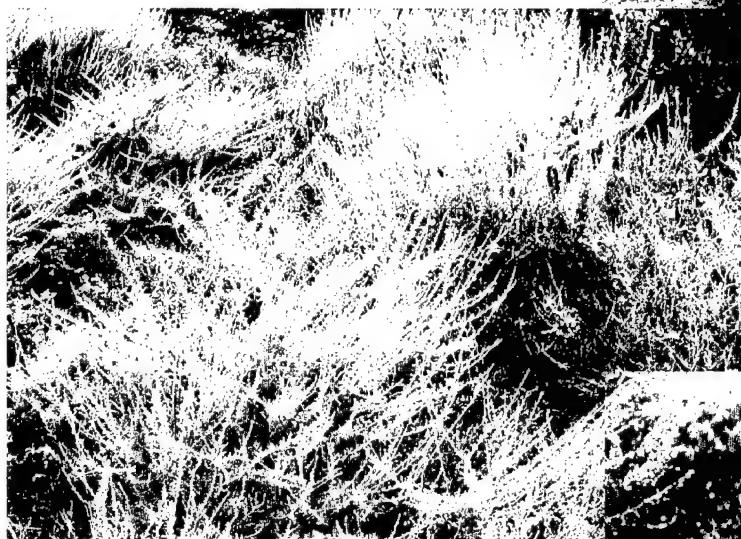


Figure 71. *Adentostoma fasciculatum*, chamise, has tiny white flowers on thickly coated bloom stalks.

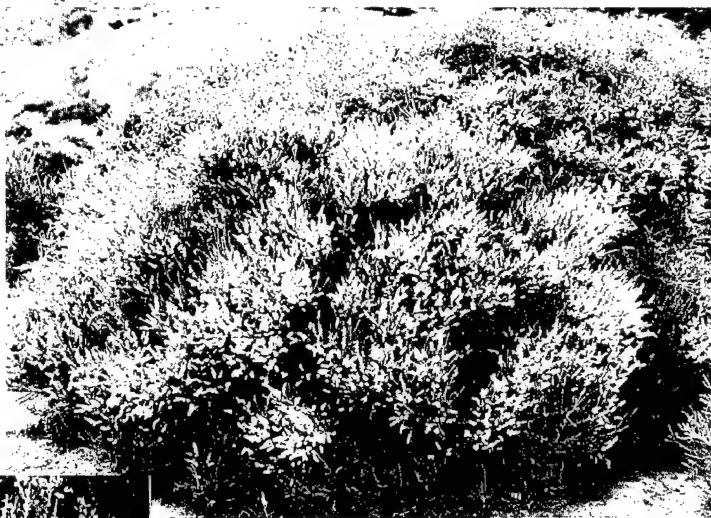


Figure 72. *Artemisia californica*, California sagebrush, has two color phases on Point Loma. The silvery type is rare on Subase, but much more common on the seaside of Point Loma.

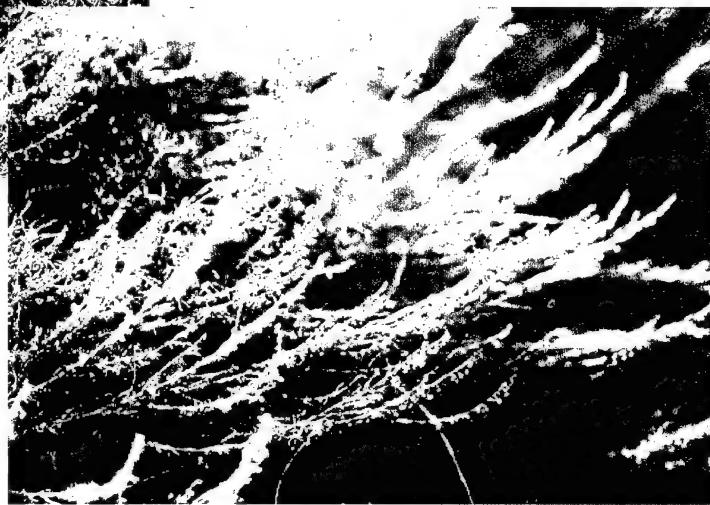


Figure 73. *Artemisia californica*, California sagebrush, has extremely tiny, inconspicuous brownish flowers on densely populated stalks.



Figure 74. *Baccharis sarothroides*, chaparral broom, has tiny green leaves and small, dense clusters of white flowers.

Figure 75. *Ceanothus verrucosus*, wartstem ceanothus, is the only ceanothus species to occur naturally on Point Loma. Because this genus hybridizes readily, special care must be taken not to introduce other species, subspecies, or varieties onto the Point as part of landscaping or restoration plans. The small spikes between the petals are field marks for ceanothus.



Figure 76. *Ceanothus verrucosus*, wartstem ceanothus, forms little nutlets or small oval seed pods. In dry years, seed viability will be way down.



Figure 77. *Encelia californica*, bush sunflower, flowers rapidly with the onset of the rains.



Figure 78. *Encelia californica*, has a large yellow flower which can be told apart from the similar flower of *Coreopsis maritima* at a distance by its distinctive dark brown center.



Figure 79. *Cneoridium dumosum diverifolia*, bushrue, is the closest American relative to the orange, which comes from China.



Figure 80. *Cneoridium dumosum diverifolia*, bushrue, forms bright orange berries after the appearance of four-petaled white flowers. This plant has an oil on its leaves to which some people are allergic and will develop large watery blisters after physical contact.



Figure 81. *Eriodictyon crassiforme*, Yerba Santa, has tube-like, pale lavender flowers; large, toothed, fuzzy gray-green leaves, and was used by both native Americans and the early European settlers for its medicinal properties.



Figure 82. *Eriogonum fasciculatum* ssp *fasciculatum*, flat top buckwheat, is an evergreen shrub that produces attractive pink buds that open into white flower clusters, then develop into bronze seed heads.



Figure 83. *Eriogonum fasciculatum* ssp *fasciculatum*, flat top buckwheat, develops clusters of whitish flowers. It is a good restoration plant, and occurs naturally on difficult soils. One must be careful to get the correct subspecies; the inland subspecies, *E. fasciculatum* ssp *foliosum*, not only messes up the genetics of the Point Loma populations, but it does not grow well here. It is not adapted to these climatic and soil conditions.



Figure 85. *Euphorbia misera*, cliff spurge, drops its leaves easily during drought, appearing externally dead. Southern California is a semi-arid region and drought-caused leaf drop is a normal part of our annual cycle.

Figure 84. *Euphorbia misera*, cliff spurge, has small “fake” flowers, thick white sap, and is a tell-tale sign that our floristic community has been influenced by the one in Baja California. We are on the edge of its northern range.

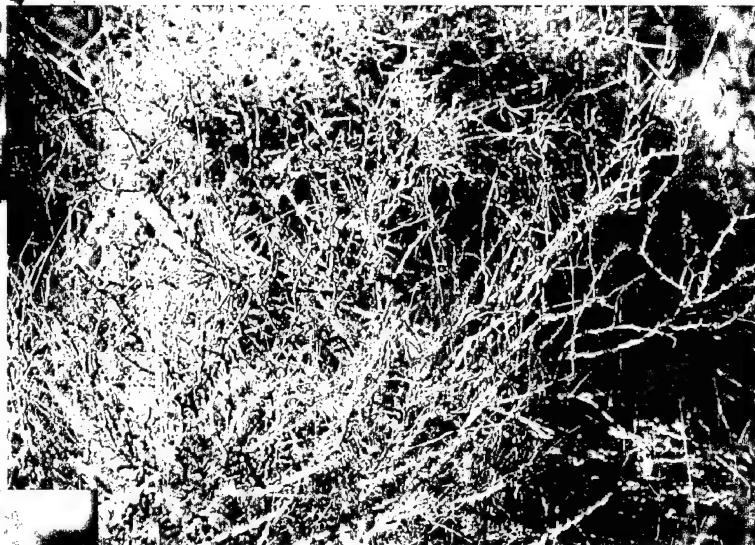


Figure 86. *Haplopappus venetus*, coast goldenbrush, is an evergreen shrub with seasonal tiny yellow flowers.



Figure 87. *Haplopappus squarrosus* ssp *grindeliioides*, common hazardia, is easily recognized by its sharply toothed, squarish leaves. It has a larger yellow flower than does its relative, *H. venetus*, and is also an evergreen shrub.





Figure 88.
Heteromeles arbutifolia, toyon, forms large bushes and small trees. It is an evergreen plant with bright green leaves, and has attractive white flower clusters.



Figure 89.
Heteromeles arbutifolia, toyon, has bright red berry clusters after the white flowers. One of its common names is Christmas berry.



Figure 90. *Isomeris arborea*, bladderpod, is an evergreen shrub that grows as isolated individuals in the coastal sage scrub. Its flowers are yellow, and the seeds are contained in large bladders, hence the common name.



Figure 92. *Lotus scoparius*, deerweed, is a short-lived perennial plant (lifespan of about three years) that drops its leaves in the dry season. It also hosts nitrogen-fixing soil bacteria and is a critical early-successional plant for ecological restoration plantings.



Figure 94. *Malachothamnus fasciculatus*, bush mallow, has an attractive pale pink-lavendar flower that is fairly large.

Figure 93. *Malachothamnus fasciculatus*, bush mallow, is an evergreen shrub that volunteers readily onto disturbed sites. Its leaf looks rather like a rough, fuzzy, gray-green maple leaf.



Figure 95. *Malosoma laurina*, laurel sumac, is a large-leaved, bright evergreen shrub and small tree. Its leaves have a characteristic inward fold and bend down; and it sports large clusters of white flowers in season. New bark and new leaves have a distinctive red tinge.



Figure 96. *Mirabilis californica*, wishbone bush, is a medium to small drought-deciduous bush.

Figure 97. *Quercus dumosa*, scrub oak, is a federal category two candidate plant and is a sensitive species. It has typical oak flowers.



Figure 98. *Quercus dumosa*, scrub oak, has very small leaves and inconspicuous, small acorns. Its growth form is dense and wiry, and it forms thickets similar to live barbed-wire.



Figure 99. *Rhamnus crocea*, spiny redberry, grows as dense, low shrubs with plentiful spines formed by dead branches and sharp twigs. It has smallish, dark red berries, and can be found as isolated individuals on the higher ground of Point Loma wildlands.

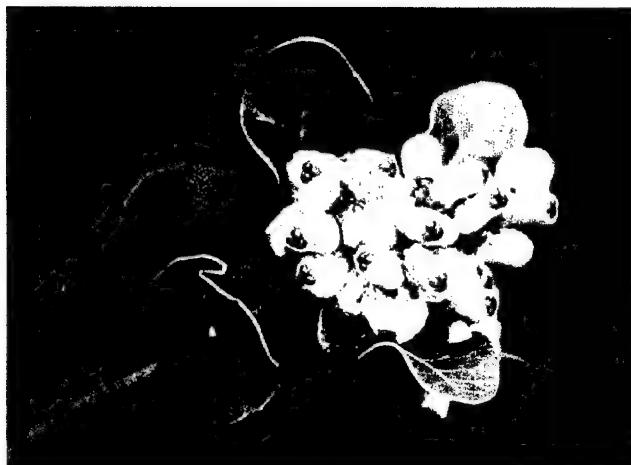


Figure 100. *Rhus integrifolia*, lemonade berry, is an evergreen with shiny green leaves that forms large sprawling bushes and low trees. Its berries have a nontoxic, acidic coating.



Figure 101. *Rhus integrifolia*, lemonade berry, is a favorite food plant for gray foxes, birds, and other animals. Without special help, its seeds take three years to scarify the seed-coat sufficiently to germinate.



Figure 102. *Salvia mellifera*, black sage, has pale lavender blooms.



Figure 103. *Salvia mellifera*, black sage, forms medium-sized bushes that are drought deciduous. It has a marvelous smell, and its leaf surface is textured like Naugahyde.



Figure 104. *Solanum xantii*, purple nightshade, is a native plant that volunteers easily into areas near undisturbed stands. From the back, the flower has the five dots characteristic of this species.

Figure 105. *Solanum xantii*, purple nightshade, has a large purple flower with the yellow cone anthers that are a sign of the nightshade family.

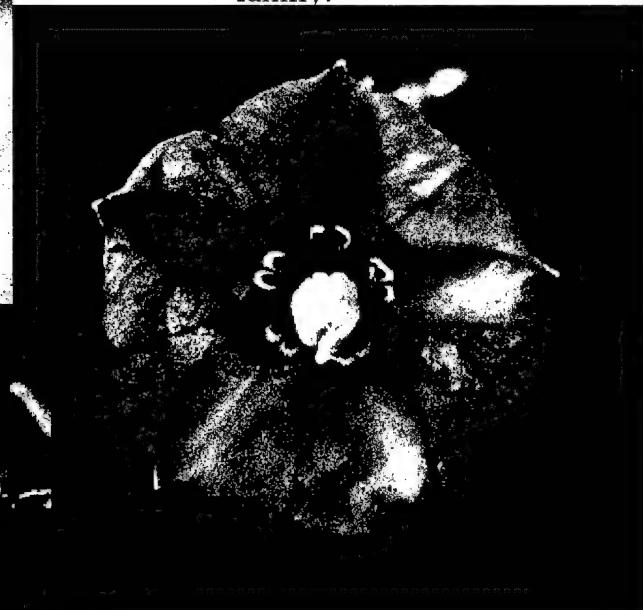


Figure 106. *Xylococcus bicolor*, mission manzanita, has small white, urn-shaped flowers.



Figure 107. *Xylococcus bicolor*, mission manzanita, has dark red berries that become black with age, recurved or folded-under leaves, and shedding bark.



Figure 108. *Castilleja foliolosa*, felt paintbrush, has flowers formed of red pigmented bracts, or special leaves.



Figure 109.
Castilleja foliolosa, felt paintbrush, is a perennial low shrub with fuzzy gray-green leaves.

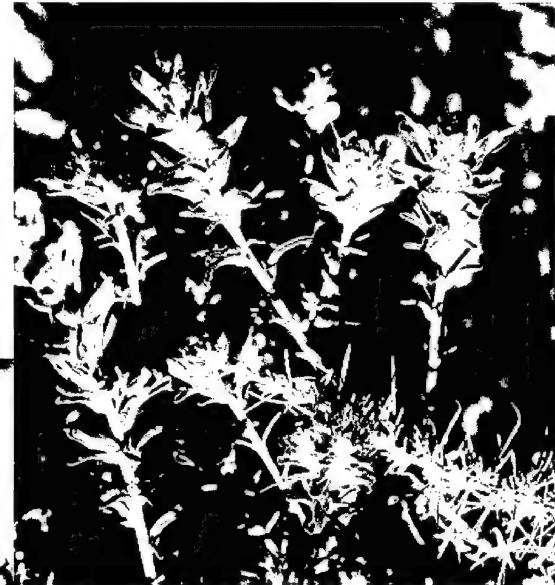


Figure 110. *Coreopsis maritima*, sea dahlia, is a spectacular plant, but is more fragile than one would expect. Both leaves and stems bruise easily.



Figure 111. *Corethrogynne filaginifolia* var. *virgata*, corethrogynne, has pale pink daisy-type flowers on a low, elegantly-sparse bush. It grows readily on sandy soils in the mid to high areas of Point Loma.



Figure 112. *Diplicus puniceus*, monkey flower, is a medium shrub, drought deciduous, with slightly sticky leaves.

Figure 113. *Gnaphalium bicolor*, gnaphalium or cudweed, has white hairy stems, fuzzy leaf undersides, and bright green leaf tops.



Figure 114. *Eriophyllum confertiflorum* var. *confertiflorum*, golden yarrow, is a low perennial shrub that produces large numbers of yellow flowers.



Figure 115. *Dodecatheon clevelandii sanctarum*, shooting stars, is a perennial forb.

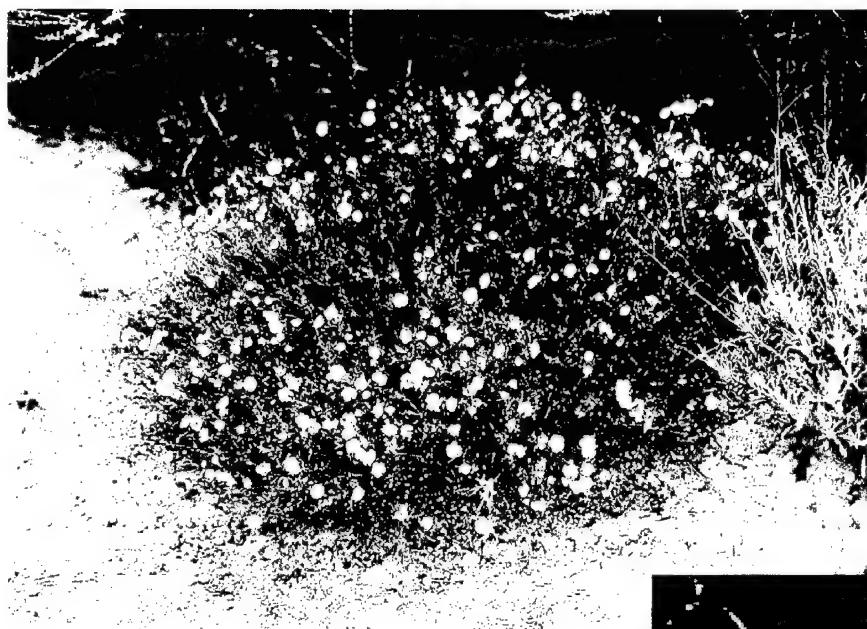


Figure 116. *Helianthemum scoparium* var *vulgare*, common rock rose, is a low perennial shrub that is drought deciduous. Its growth form is a hemisphere.



Figure 117. *Helianthemum scoparium* var *vulgare*, common rock rose, has very narrow leaves and small yellow flowers.



Figure 118. *Lomatium lucidum*, lomatium, is found as an understory plant in the coastal sage scrub. It has a most attractive umbel seed-head.

Figure 119. *Viguiera lacinata*, San Diego sunflower, forms a low, perennial bush with small, curled and notched leaves. The yellow flowers are smallish. I am not certain that this native plant occurs naturally on Point Loma; I have only seen it on or near areas of known disturbance and revegetation.



Figure 120. *Calystegia macrostegia*, native morning glory, is a perennial vine-like plant with large, trumpet-shaped white flowers.



Figure 121. *Astragalus trichopodus* ssp. *leucocarpus*, Southern California locoweed, is a short-lived perennial shrub with cream colored flowers that develop into large seed pods. When dry, these pods can sound like a rattlesnake as a person brushes past the bush.



Figure 122. *Dudleya edulis*, lady fingers, a succulent with long cylindrical leaves, is frequently grazed by animals.



Figure 123. *Dudleya lancelolata*, lance-leaved dudleya, is similar to *D. pulverulenta*, but has a different bloom stalk and more pointed leaves.



Figure 124. *Dudleya pulverulenta*, chalk liver-forever, has a light powder (chalk) on the basal leaves.

Figure 125. *Dudleya pulverulenta*, chalk liver-forever, unlike the other two *Dudleyas*, has lots of bracts (small leaves) on the bloom stalks.



Figure 126. *Ferocactus viridescens*, coast barrel cactus is a federal category two candidate species. It is sensitive because of massive habitat loss due to excessive development of coastal sage scrub habitat.



Figure 127. *Ferocactus viridescens*, coast barrel cactus, has small yellow green flowers circling the crown of the barrel in season. The unopened buds are striped cream and maroon.



Figure 128. *Yucca schidigera*, Mohave yucca, grows in the coastal sage scrub as small, isolated clumps that are probably one individual plant. It has spectacular stalks of large creamy flowers, surrounded by stiff leaves with curling fibers at the edges.



Figure 129. *Opuntia littoralis*, prickly pear, has hybridized frequently with the domesticated *O. indicata*. True *O. littoralis* has lots of spines on the fleshy pads.



Figure 130. *Opuntia prolifera*, coastal cholla, has a thick-set, stocky, robust growth form.



Figure 132. *Opuntia parryi* var *serpentina*, snake cholla, does hybridize with *O. prolifera* on Point Loma. Hybrids can add lots of difficulty to identifying an individual plant to correct species.

Figure 131. *Opuntia parryi* var *serpentina*, snake cholla, has a thinner, lankier, stretched-out, and frequently laying-on-the-ground type of growth form.

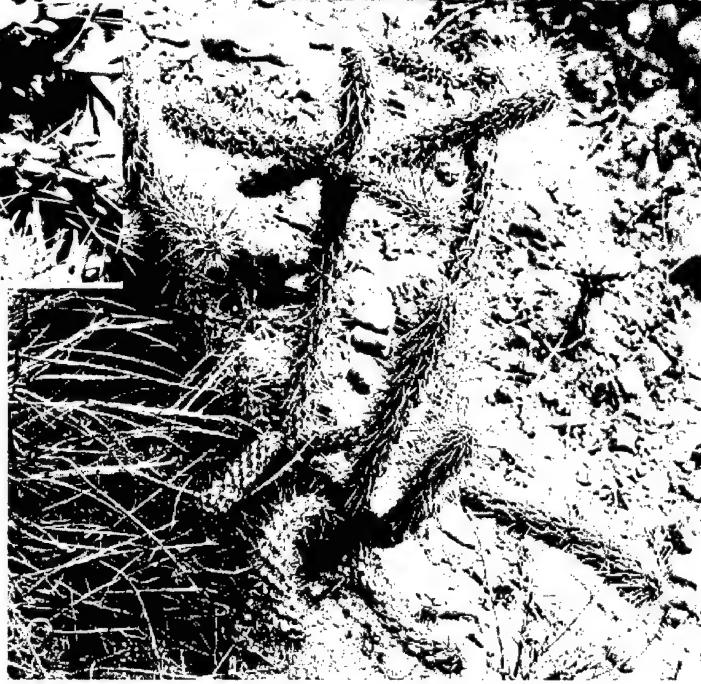




Figure 133. *Antirrhinum nuttallianum*, Nuttles snapdragon, is an annual that comes up in small, newly disturbed areas.

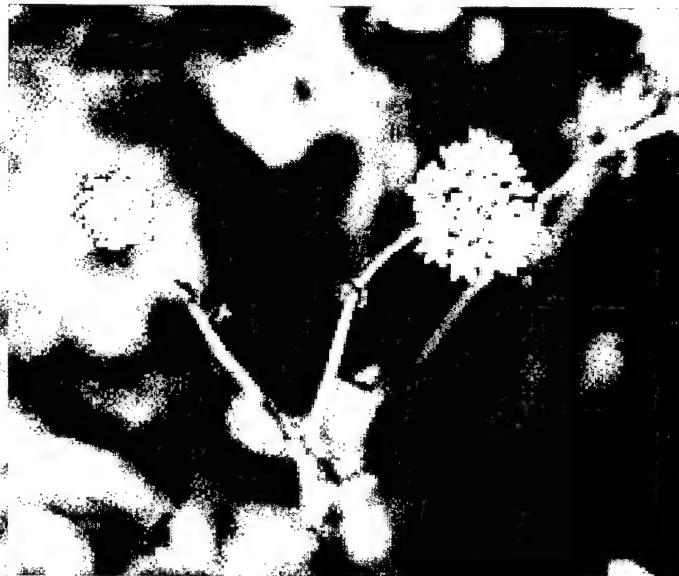


Figure 134. *Chaenactis glabriuscula* var. *orcuttiana*, yellow chaenactis, is a lanky, colorful annual that grows on top of the sandstone bluffs above Steamplant Road.



Figure 135. *Camissonia bistorta*, sun cups, is a low growing annual that is found in open spots with sandy soils.



Figure 136. *Camissonia bistorta*, sun cups; closeup of the flowers showing the diagnostic four dark spots in the center.



Figure 137.
Centaurium venustum,
canchalogua, is a
beautiful annual
flower with cork-
screw shaped anthers;
an overview.



Figure 138. *Centaurium venustum*,
canchalogua, a beautiful pink and white
annual flower shown in closeup.

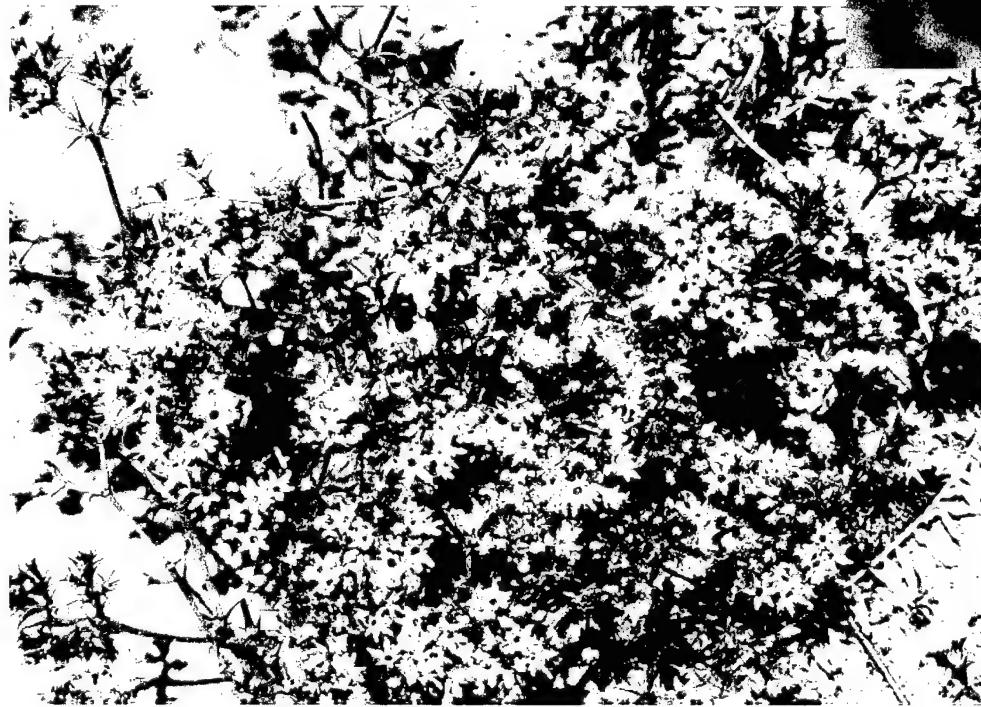


Figure 139.
Chorizanthe fimbriata var.
fimbriata, fringed
spine flower, is a
small low-growing
annual with spines
and beautifully
fringed pale pink
flowers.

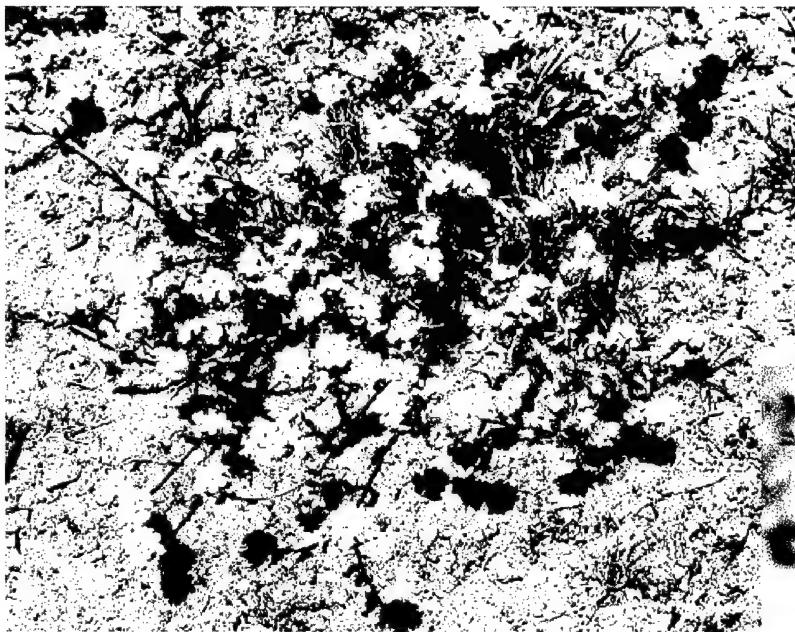


Figure 141. *Lupinus truncatus*, is a delicate annual lupine native to Point Loma. The palmately arranged leaves are diagnostic of the lupine family.



Figure 142. *Phacelia distans*, common phacelia, has pale lavender flowers arranged on a caterpillar-like flower stalk.

Figure 143. *Navarretia hamata* ssp *hamata*, skunk weed; is a low annual that grows in open areas with sandy soils. It has a faint scent of old skunk about the plant.

Figure 140. *Cryptantha intermedia*, popcorn flower, is a common, low-growing annual in the coastal sage scrub. It can be identified to species only with mature seeds.

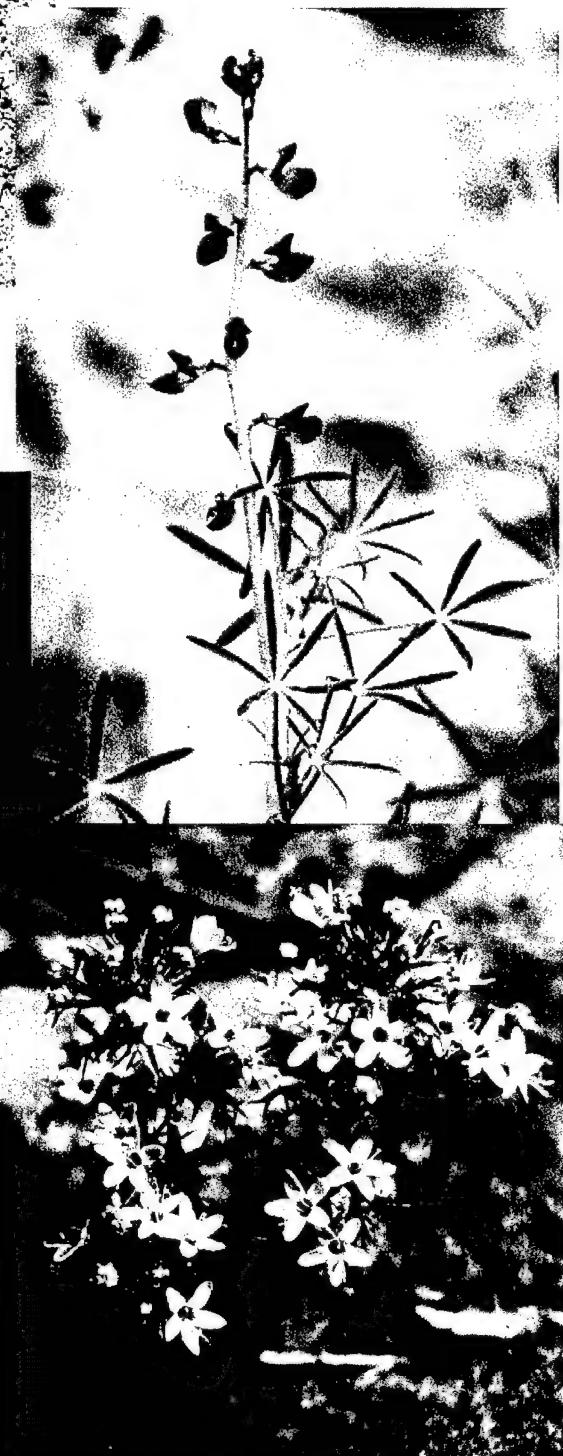




Figure 144. *Eschscholzia californica*, California poppy; this plant is the local Point Loma variety, which has golden yellow flowers rather than red-orange flowers which are usually found in commercial seed-mixes.

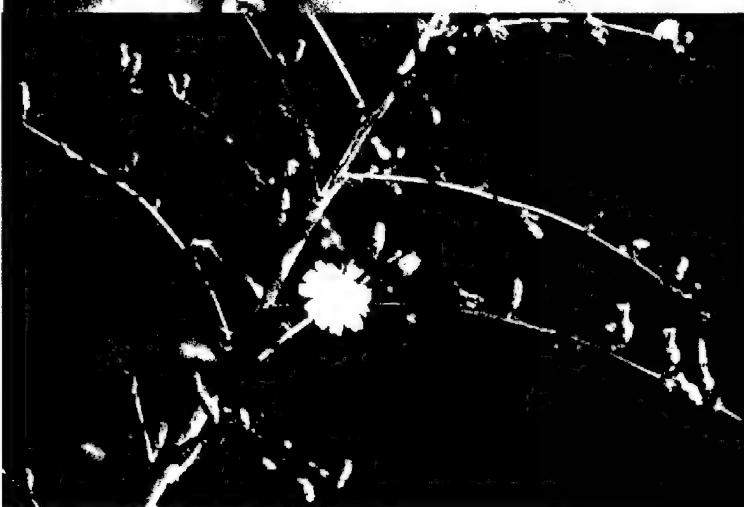


Figure 145. *Stephanomeria virgata*, twiggy wreath plant, is a tall sparse annual which blooms in September.

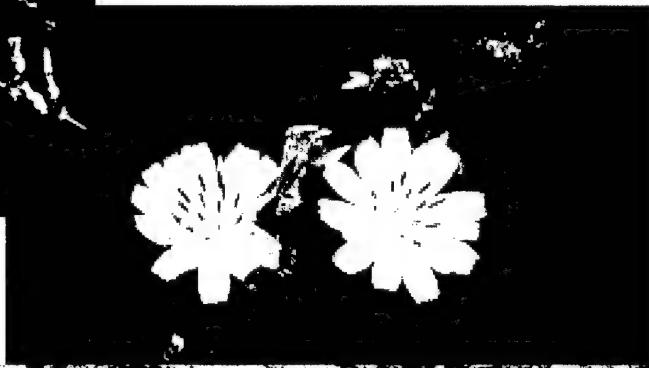


Figure 146. *Stephanomeria virgata*, twiggy wreath plant; closeup of the white flowers with purple anthers.

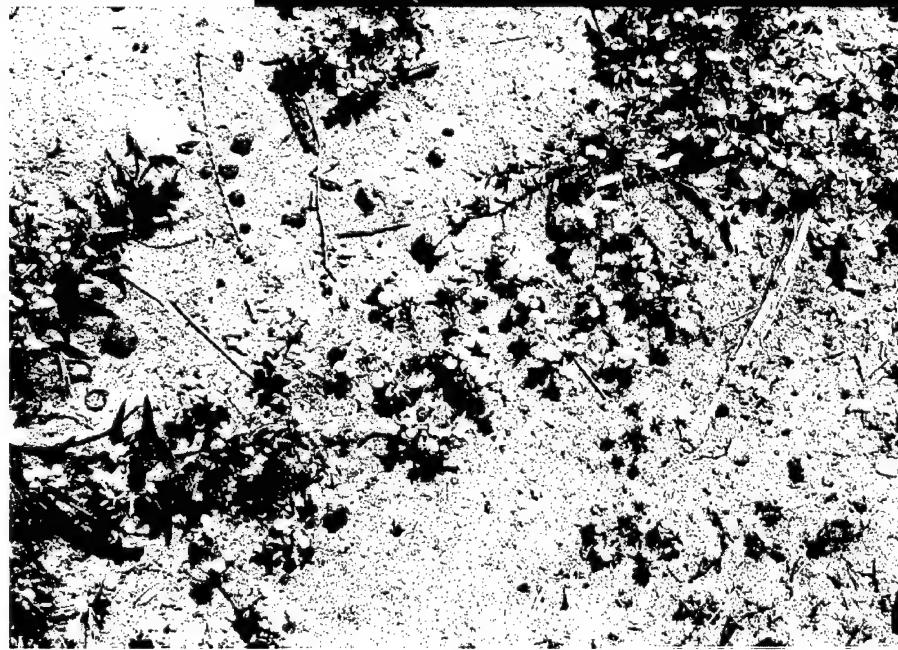


Figure 147. *Stylocline gnaphaloides*, everlasting nest-straw; this annual appears like tiny cotton balls scattered across open, sandy spaces.



Figure 150. *Calochortus weedii* var. *weedii*, Mariposa lily, flower and bud.

Figure 151. *Calochortus weedii* var. *weedii*, Mariposa lily, flower seen from the top.



Figure 148. *Allium praecox*, wild onion flowers.

Figure 149. *Allium praecox*, wild onion seed pods.



Figure 153. *Marah macrocarpus*, wild cucumber; a vine-like plant growing from a huge bulb or storage root.



Figure 152.
Dichelostemma pulchella, blue dicks; a common bulb plant in the coastal sage scrub.

Figure 154. *Dichelostemma pulchella*, blue dicks; a single stem supports a cluster of small purple flowers. This plant has edible bulbs.



Figure 157.
Piperia cooperi, chaparral orchid; closeup of flowers.

Figure 155. *Piperia cooperi*, chaparral orchid; bloom stalk with buds.

Figure 156. *Piperia cooperi*, chaparral orchid; entire plant, blooming.

Figure 158.
Zigadenus fremonti, star lily; closeup of flowers.

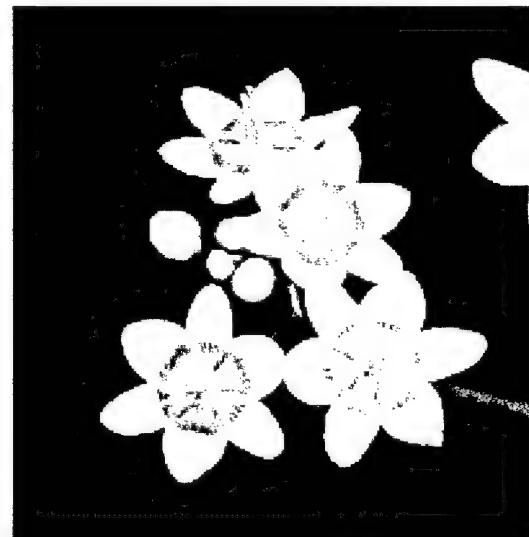




Figure 159. *Chlorgalum parvaflorum*, small-flower soap-plant; found on Subbase only under *Eucalyptus* trees east of Bldg 140, where the black-crown night heron nesting colony existed.



Figure 160. *Distichlis spicata* ssp. *spicata*, saltgrass; shown in the growth form common in coastal sage scrub. This grass is the obligate food for the sensitive wandering skipper butterfly. Saltgrass grows much taller near the beach.



Figure 161. *Melica imperfecta*, coast range melic seed heads. The seeds are often light and dark in the head, lending a "salt and pepper" appearance.



Figure 162. *Elymus glaucus*, blue wildrye, grows in large patches with big blades and impressively large seed stalks. Unfortunately, almost all *Elymus* seed is sterile and the grass reproduces vegetatively.



Figure 163. *Selaginella cinerascens*, mesa mossfern, forms thick blankets in the wildlands over open areas. It is one of natures' own erosion control methods; overview photo.



Figure 164. *Selaginella cinerascens*, mesa mossfern; closeup of the plant in its typical thick mat covering the ground.



Figure 165. *Polypodium californicum*, California polpody. A common fern in the undisturbed coastal sage scrub, it forms thick stands of fronds on the northfacing slopes after heavy rains.

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